

### Claims

1. Process for the fine machining of functional surfaces on pre-machined and hardened transmission gear workpieces (6) with a cylindrical boring, wherein in one and the same fixing of the workpiece on surfaces not requiring hard machining, the gearing (7) according to a continuously working generating grinding process and, at the same time, the boring (8) are machined.
2. Process, according to claim 1, wherein for the machining of the gearing (7) the continuous generating grinding using a cylindrical grinding worm is used.
3. Process according to claim 1, wherein for the machining of the gearing (7) the continuous profile generating grinding with a globoid-like grinding worm is used.
4. Device for the fine machining of functional surfaces on pre-machined and hardened transmission gear workpieces, comprising a workpiece spindle (3), in which an driver (9) is mounted with a first carrier surface (19, 22), a tailstock (16), in which a counter-holder (10, 24) with a second carrier surface (18, 25) is rotatably mounted, wherein the tailstock (16) is movable with respect to the workpiece spindle (3) and the gear (6) is clamped between both of the carrier surfaces and is centered at the driver (9) and/or at the counter-holder (10, 24), wherein the counter-holder (10, 24) has a through-boring (29, 35) running coaxial to its rotary axis, through which an inner machining tool (11) is guided for the machining of the boring (8) of the gear (6), as well as a grinding spindle for mounting a grinding worm (5) with which the gearing (7) is machined simultaneously.
5. Device according to claim 4, wherein, at least, one of the frontal surfaces (18, 19) is frusto-conical for gripping into a chamfer (17, 18) of the workpiece (6).
6. Device according to claim 4, wherein, at least, one of the carrier surfaces (22, 25) is a plane surface.

7. Device according to claim 4, wherein the first carrier surface (19, 22) is coated with hard-material grains.

8. Device according to claim 4, wherein the transfer of the torque from the workpiece spindle (3) onto the gear (6) is performed exclusively via a frictional engagement of the first carrier surface (19, 22).

9. Device according to claim 4, wherein a diameter of the through-boring (29, 35) is larger than a diameter of the boring (8) of the gear (6).

10. Device according to claim 4, wherein the driver (9) has a coaxial terminal boring (36) a diameter of which is larger than a diameter of the boring (8) of the gear (6).

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